

5        **CYANOCOBALAMIN LOW VISCOSITY AQUEOUS FORMULATIONS FOR  
INTRANASAL DELIVERY**

**Abstract of the Disclosure**

10        A stable pharmaceutical mercury-free aqueous solution of cyanocobalamin  
comprised of cyanocobalamin and water wherein said solution of cyanocobalamin is  
suitable for intranasal administration, has a viscosity less than about 1000 cPs, and  
wherein said solution of cyanocobalamin has a bioavailability of cyanocobalamin when  
administered intranasally of at least about 7% relative to an intramuscular injection of  
15        cyanocobalamin with the proviso that the solution is essentially free of mercury and  
mercury-containing compounds. The present invention is also directed towards a method  
for elevating the vitamin B12 levels in the cerebral spinal fluid (CSF) comprising  
administering intranasally a sufficient amount of a mercury-free cyanocobalamin solution  
so as to increase the average ratio of vitamin B12 in the CSF to that in the blood serum  
(B12 CSF/B12 Serum x 100) to at least about 1.1 comprising intranasally administering  
20        an aqueous solution of a cyanocobalamin, wherein said solution of cyanocobalamin has a  
bioavailability of at least 7% relative to an intramuscular injection of a cyanocobalamin.